September 21, 2015

Mr. George Harding, MA NPDES State Liaison
USEPA Region I – New England
5 Post Office Square
Mail Code: OES
Boston, MA 02109-3912

RE: Notification of Permit Exceedances, Commuter Rail Maintenance Facility, Somerville MA, NPDES Permit No. MA0003590

Dear Mr. Harding:

On September 17, 2015, U.S. EPA Region I was notified of NPDES Permit No. MA0003590 effluent exceedances of Oil and Grease and Total Suspended Solids. As a result of the 24-hour notification, a 5-day written submission was requested by EPA representative George Harding, MA NPDES state liaison. The following sections detailing the exceedances, site conditions and proposed mitigation are included in this submittal.

Summary of Notification Event and Exceedances

The NPDES permit requires periodic effluent sampling (monthly wet weather and dry weather, quarterly and annually) at the Prison Point oil/water separator (OWS) located at the Commuter Rail Maintenance Facility (CRMF) in Somerville, MA. Effluent samples are collected from a sampling port in a PVC pipe (located at the ground surface) through which a submersible pump in Chamber 4 pumps water to Chamber 5. However, the submersible pump cannot operate if the water level in Chamber 4 is too low, or not present. As a result of the GLX construction project, no water flows past the sampling port. As described below, this is occurring due to the recent dewatering operations, which significantly lower the water levels in the OWS chambers so that either no water or a few inches of water are present.

As a result of the current conditions of the permitted Site:

- During a rain event on September 10, 2015, water was not flowing past the pipe's sampling port due to low water conditions in Chamber 4. Similarly, a very low level of water was observed in Chamber 6 (final chamber before entering the outfall pipes); however, as the rain event progressed, the Chamber 6 water level was observed to increase sufficiently to allow for sample collection.
- Monthly and quarterly effluent samples were then taken from Chamber 6 during this rain event.

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- This sampling consists of three grab samples collected at: first flush, 1 hour and 3 hours, following permit-required analytical methods.

The permit specifies maximum daily effluent limits for a total of three sampling parameters. These consist of two monthly wet weather sampling parameters:

- Oil and Grease – 15 mg/l
- Total Suspended Solids (TSS) – 100 mg/l

and one quarterly sampling parameter:

- Benzene – 50 mg/l.

The analytical results of the samples collected on 9/10/2015, following permit requirements for these three parameters, indicated that the maximum daily effluent limit for Oil and Grease was exceeded in the first two grab samples, and for TSS in all three grab samples. The results are summarized in the table, below.

Sample Date	Sample Period (grab)	Oil & Grease (mg/l) (EPA Method 1664A) (15 mg/l limit)	Total Suspended Solids (mg/l) Standard Method 2540D) (100 mg/l limit)	Benzene (ug/l) (EPA Method 624) (51 ug/l limit)
9/10/2015	1st Flush	**61**	**3100**	ND (< 1.0)
	1 Hour	**52**	**560**	ND (< 1.0)
	3 Hour	10	**230**	ND (< 1.0)

GLX Project Description

The Green Line Extension (GLX) is a project of the Massachusetts Bay Transportation Authority (MBTA). In addition to extending the Green Line light rail system to a series of new stations in Cambridge, Somerville and Medford, GLX is upgrading the drainage system. This work includes infrastructure improvements to the storm drains traversing the CRMF property and which flows through the Prison Point OWS before discharge to the Millers River at the cofferdam outfall. As noted above, discharges from the Prison Point OWS to the Millers River are regulated under NPDES Permit No. MA0003590.

Specifically, GLX improvements include cleaning of approximately 2,500 linear feet of existing drain piping (48" to 72" diameter) by hydrojet methods; installation of approximately 108 feet of 84" reinforced concrete pipe (RCP), 52 feet of 4'x10 concrete box, 364 feet of 84" RCP, and 117 feet of 72" RCP, with manholes between each section of structure (DMHs 13.1 through 13. 8). Structures are being installed between approximately 12 and 22 feet below grade (fbg). This work also includes construction of 188 lineal feet of 48" reinforced concrete pipe and four drain manhole structures to

restore flow to the third outfall pipe to the Millers River, which was halted when Central Artery construction damaged the pipe.

GLX Dewatering Activities

As part of the drainage system work, GLX has installed a series of dewatering wells in the areas of the new drainage structures to lower the groundwater table to allow excavation in dry conditions. These wells are located in the general area of the Prison Point OWS. Authorization to dewater in the area of the area of the CRMF is being conducted under a Remediation General Permit (Authorization Number MAG910671) due to the presence of petroleum impacted groundwater. Dewatering from wells in the area proximate to the Millers River Coffer Dam is being performed in conformance with Construction General Permit No. MAR12B357. However, the backup of water in the outfall pipes due to their location below the top of the cofferdam weir resulted in the water levels remaining surcharged in the pipes in the areas being cleaned and at the structures; this condition prevented effective implementation of the work. Therefore, additional dewatering was determined to be required. This effort focused on lowering the water level in the cofferdam to expose the existing outfall pipes. A diesel powered pump placed above the cofferdam was utilized to dewater the cofferdam. GLX observed that by lowering the level of water in the cofferdam, water levels in the drain pipes and the areas excavated for the new storm drain pipes were also lowered. Dewatering of the cofferdam also resulted in a significantly diminished flow through the Prison Point OWS, such that the little flow that is intermittently present is typically below the weir that separates Chambers 2 and 3.

Water from the dewatering pump at the cofferdam is fed through a nonwoven geotextile sediment trap (a so-called "dirt bag"). Water from the "dirt bag" flows down the existing rip-rap slope. Because there have been intermittent discharges of oily water or oil-impacted sediments from the outfall pipes, GLX implemented a mitigation plan to protect the Millers River. This included the following components:

- Placement of absorbent booms in the cofferdam;
- Placement outside of the cofferdam of an absorbent roll (or "stream sweep"), followed by at least three oil-absorbent booms; and
- Beyond the absorbent booms, a pre-existing curtain boom. (See attached Figure 1 for a schematic layout).

These measures were originally implemented by GLX following a "slug" of oil exiting the pipe at the coffer dam during cofferdam dewatering. The source of this oil is not known, but was likely entrained in grit and sediments exposed during the dewatering and/or pipe cleaning process. This resulted in GLX notifying the Massachusetts Department of Environmental Protection (MassDEP) of the sudden release and implementing the mitigation as an IRA Plan (MassDEP RTN 3-30603). Notification was also provided to the National Response Center, U.S. EPA and the U.S. Coast Guard. Dewatering was

temporarily halted following this notification. Dewatering was restarted with approval received from MassDEP on April 24, 2015.

Note that GLX has also removed the accumulated sediments from within the cofferdam (measured at approximately four feet (4') in thickness). Further, while the efficacy of the Prison Point OWS (primarily oil removal) is reduced during the GLX construction, GLX's use of a filter bag for sediment removal prior to discharge to the Millers River results in a lower TSS load to the river than would otherwise occur.

Dewatering of the cofferdam is anticipated to continue until the spring of 2016, concurrent with the scheduled completion of GLX drainage construction. The condition of the absorbent booms and stream sweep are inspected periodically by Kleinfelder, Inc. on behalf of the GLX project and they are replaced on an "as-needed" basis. These mitigation measures will remain in place until such time as drainage construction is completed.

Anticipated Causes for Exceedances and Mitigation

Cleaning of the pipes upstream of the oil/water separator was conducted by GLX prior to the most recent wet-weather sampling event. Prior to cleaning, sediment and silt were observed in the pipes at levels that at times exceeded 50% of the pipe volume. Pre-characterization sampling of the sediments by GLX identified the presence of elevated concentrations of petroleum products. While the cleaning of the pipes was deemed successful, there is likely residual sediment in the pipes. With a long spell of dry weather following the pipe cleaning, concurrent with the continuing dewatering of the cofferdam allowing a lowered water flow in the pipes and Prison Point OWS, it is assumed by the conditions present at the Site that the initial flood of water through the drainage system likely caused a surge of the remaining sediments to flow into and through the Prison Point OWS.

As described above, the lowered water flow can also allow for passage of floating oil below the "oil trap" weir between Chambers 2 and 3. This oil can then enter the outfall discharge pipes to the Millers River.

The series of treatment measures (described above) that have been installed for discharges to the Millers River cofferdam are anticipated to mitigate the effects of oil or suspended solids that may enter the cofferdam. These measures are monitored and maintained by GLX to ensure proper operation.

Proposed Alternate Sampling Location

In order to monitor the effluent from the Prison Point OWS following treatment by the mitigation measures, an alternate effluent sampling location is proposed in the Millers

River to replace all effluent sampling conducted at the Prison Point OWS. Two alternate sampling locations are proposed:

- ALT-1: downstream of the containment boom, or
- ALT-2: downstream of the absorbent booms and upstream of the containment (curtain) boom.

The first sample location is preferred as it will represent effluent that has been treated by all mitigation measures. The second sample location may encounter less mixing with other nearby outfall discharges (Boston Sand & Gravel and City of Boston stormwater), however, capture by the final curtain boom is not accounted for. These proposed sampling locations are shown on Figure 1.

Summary of Requested Approval for Mitigation Measures

As a result of the above, MBTA, Keolis Commuter Services, LLC (Operator), and GLX are working together to maintain permit requirements and are jointly requesting to:

1. Maintain the existing mitigation measures installed in response to the IRA condition, and
2. Change all Permit-required effluent sampling to sampling location ALT-1 or ALT-2 during the GLX construction period to measure the efficacy of the mitigation.

We hope this information sufficiently addresses the current conditions and mitigation. Please do not hesitate to contact Janis Kearney at 617-222-1592 or Clary Coutu at 617-222-8009 if you have any questions.

Janis Kearney

Janis Kearney, Esq., Director of Environmental Compliance
Massachusetts Bay Transportation Authority

Clary Coutu

Clary Coutu, Environmental Compliance Manager
Keolis Commuter Services, LLC

cc: Debra Darby, MBTA
Art Spruch, Kleinfelder

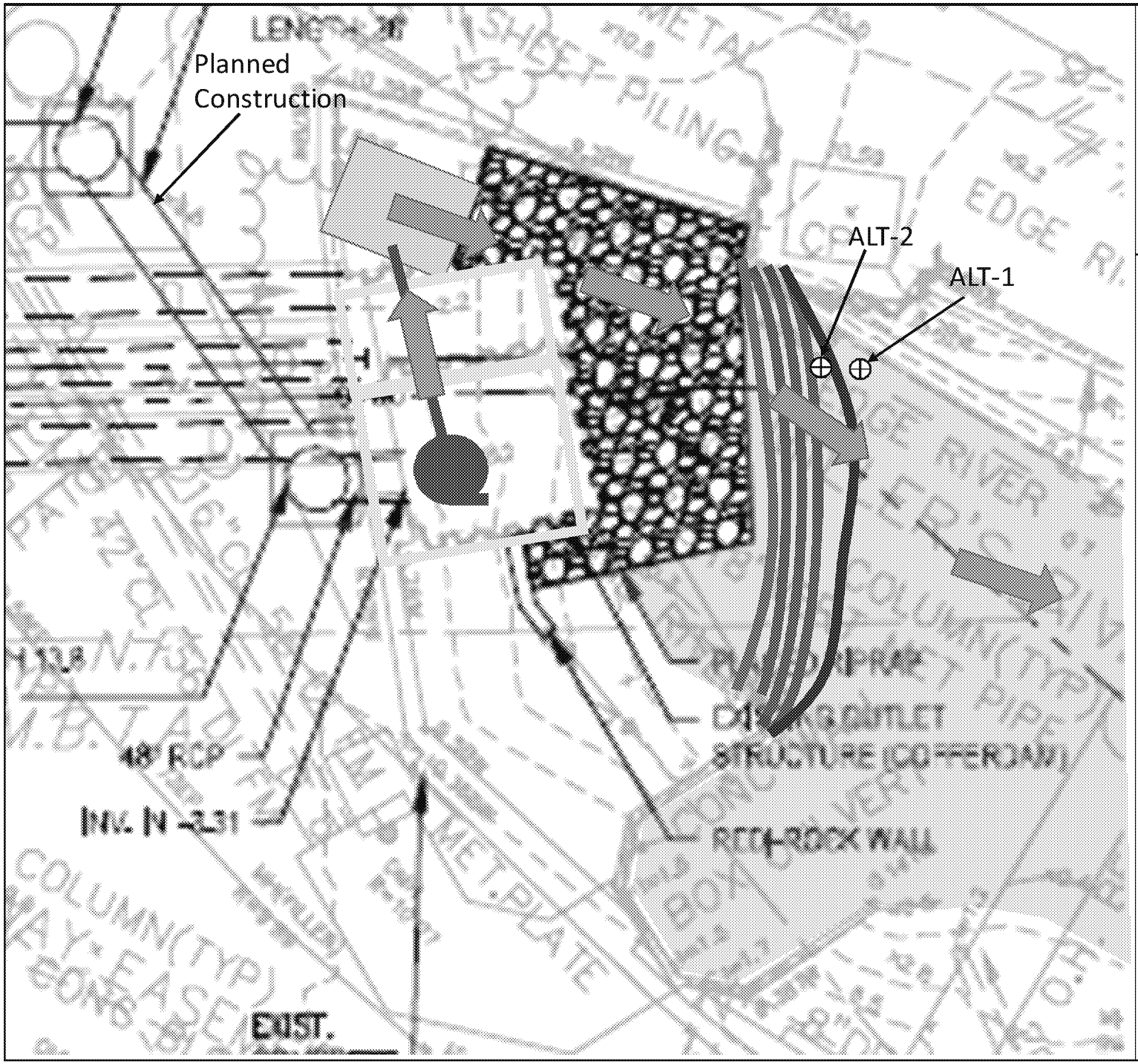

Figure 1
Millers River
Coffer Dam
Mitigation Plan

Legend

- Stream Sweep
- Absorbent Boom
- Curtain Boom
- Coffer Dam
- Silt Bag
- Dewatering Pump
- Water Flow
- ⊕ Proposed Sample Location

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